ABSTRACT

Detection and monitoring of flying insects of a given species can be facilitated by placing inside a lure-baited trap a microcontroller assembly that can sense and discriminate the presence of that species, usually by the sound it makes and then sending a positive report to a central monitoring station by satellite, internet, or antennae transmission. The central monitoring station receives the putative identifications of the targeted insect species, matched with the locations of traps responding positively, and then maps the locations of the positive trap responses. Additional features include: identification of insect species by a characteristic acoustic frequency range, a pattern stored in the microcontroller and/or the central monitoring station; use of multi-lure traps; periodic transfer of test signals from the central monitoring station to remote detection stations to verify that the system is working properly; and use of the microcontroller sensor assembly without traps to monitor sound-emitting life forms at sites attractive to targeted species.